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10/763,128	01/22/2004	Brant D. Nystrom	2003-0485.02	6187

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EXAMINER	
ABDI, AMARA	
ART UNIT	**PAPER NUMBER**
2624	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/763,128	NYSTROM ET AL.	
	Examiner	Art Unit	
	Amara Abdi	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-6,10-16 and 20-24* is/are rejected.

7)☒ Claim(s) *2,7-9 and 17-19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01/22/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Applicant's response to the last office action, filed February 2, 2008 has been entered and made of record.

2. Applicant's arguments filed 01/28/2008 have been fully considered, but they are not persuasive.

Remarks

3. Regarding claims 1, 10, and 24, Applicant's argues that the computer readable medium as defined by claims 1-24 of the subject application are nonobvious over and patentably distinguishable from Sussman et al. in view of Miyamoto. Furthermore, Miyamoto is non-analogous art and, as such, cannot serve as the basis for a rejection.

However, in response to the Applicant's argument, *First*, the Examiner would like to point out that the Miyamoto is used to produce an understandable rational for linking the two references, where Miyamoto teaches a concentration ratio of the liquid which provide just a number in form of ratio (example 10:1) which would provide Sussman's moving window and histogram equalization system the improving of image quality. Therefore, both Sussman and Miyamoto deal with the improving of image quality in the foregoing image, which make the two references analogous to each other. *Second*, in response to the applicant's arguments that the computer readable medium as defined by claims 1-24 of the subject application are nonobvious over and patentably distinguishable from Sussman et al. in view of Miyamoto, the Examiner would like to point out the following precision:

Sussman et al. teaches a moving-window, histogram equalization method of processing images (column 25, line 44-47), system (column 2, line 40-41), and computer program (column 6, line 26-30), the method comprising; breaking the image into a plurality of tiles (column 6, line 39-41); processing each of the plurality of tiles by (column 5, line 59-60), (it is read that the image processor is processing the plurality of tiles) by obtaining a control parameter (column 27, line 35-37); determining a histogram for one of the plurality of tiles (column 9, line 21-23), (the determining of histogram is read as the same concept as the determining of a histogram area). determining an area of the image that includes the one of the plurality of tiles and information outside the one of the plurality of tiles (column 10, line 15-18); creating a first output by performing a histogram equalization on the area (column 9, line 21-23); creating a second output based on the control parameter and the first output (column 15, line 64-67); and using the second output to process the one of the plurality of tiles (column 16-line 1-3).

Sussman et al. do not explicitly teach the concentration ratio.

Miyamoto teaches the concentration ratio (paragraph [0030], line 8-10).

All of the moving window, histogram equalization method of processing images is known in Sussman et al. and Miyamoto references. The only difference is the combination of the concentration ratio with the histogram equalization method and processing images.

In addition the KSR states: “All the claimed elements were known in the prior art and one skilled in art could have combined the elements as claimed by known methods

with no change in their respective functions, and the combination would have yield predictable results to one of ordinary skill in the art at the time of the invention"

Thus, it would have been obvious to one having ordinary skill in the art to use the concentration ratio though by Miyamoto which is just value number in form of ratio in the histogram equalization method of processing images though by Sussman et al., since the concentration ratio which is just a value number in form of ratio can be used in histogram equalization method of processing images to achieve a predictable result of improving the image quality in the forgoing image forming method (paragraph [0015], line 1-3).

Therefore, the rejection of claims 1, 10, and 24 is good and should be sustained.

b) Regarding claims 3 and 13, Applicant's argues that the deficiencies in the combination of Sussman et al. and Miyamoto are not overcome by further combination with Swada et al. Moreover, Sawada et al., alone or in combination with Sussman et al. and Miyamoto, fail to teach all the limitations of the claimed invention.

However, in response to the Applicant's argument, the Examiner disagrees for the following reason:

Sussman et al. and Miyamoto disclose all the subject matter as described above in a. Sussman et al. and Miyamoto do not explicitly mention the creating of the first and second look-up table. Sawada et al., teaches an image processing apparatus, where creating the first lookup table (column 4, line 9-12), and the second lookup table (column 4, line 15-17). In addition the Ksr states: "All the claimed elements were known in the prior art and one skilled in art could have combined the elements as claimed by

known methods with no change in their respective functions, and the combination would have yield predictable results to one of ordinary skill in the art at the time of the invention".

Thus, it would have been obvious to one having ordinary skill in the art to use the image processing apparatus though by Sawada et al., where creating the first and second lookup table, in the histogram equalization method as shown in Sussman et al. reference, the process of creating of lookup table could be used in combination with the method of moving window to achieve the predictable results of transferring a digital image faster to suit the needs of print engine to print the object in real time (column 3, line 8-9).

Therefore, the rejection of claims 3 and 13 is good and should be sustained.

c) Regarding claims 11 and 21, Applicant's argues that Hanna does not teach using a concentration ration CR as defined in the subject application. Furthermore, the deficiencies in the combination of Sussman et al. and Miyamoto are not overcome by further combination with Hanna.

However, in response to the Applicant's argument, the Examiner disagrees for the following reason:

As described in a) Sussman et al. and Miyamoto teaches all the limitation of claims 10 and 20. Sussman et al. and Miyamoto do not explicitly mention the coupling of the printer to the processor. Hanna, teaches a digital copying system using a high-speed data bus without the use of data buffers, where the printer is coupled to the processor (column 3, line 14-16). In addition, the Ksr states: "All the claimed elements

were known in the prior art and one skilled in art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yield predictable results to one of ordinary skill in the art at the time of the invention".

Thus, it would have been obvious to one having ordinary skill in the art to use the coupling system of the printer to the processor as though by Hanna, in the moving window of processing image as shown by Sussman et al. since the coupling of the printer to the process could be used in the moving window of processing image to achieve a predictable result of transferring a digital image faster to suit the needed of print engine to print the object in real time 9column 3, line 8-9).

d) Regarding claims 12 and 22, Applicant's argues that Safai does not teach a concentration ratio Cr as defined in the subject application. Furthermore, the deficiencies in the combination of Sussman et al. and Miyamoto are not overcome by further combination with Safai.

However, in response to the Applicant's argument, the Examiner disagrees for the following reason:

As described in a) Sussman et al. and Miyamoto teaches all the limitation of claims 10 and 20. Sussman et al. and Miyamoto do not explicitly mention the coupling of the image capture device to the processor. Safai, teaches a digital camera, where the imaging unit imaging unit is connected to the digital image processor (Fig. 2A, paragraph [0035], line 3-5). In addition the Ksr states: "All the claimed elements were known in the prior art and one skilled in art could have combined the elements as

claimed by known methods with no change in their respective functions, and the combination would have yield predictable results to one of ordinary skill in the art at the time of the invention".

Thus, it would have been obvious to one having ordinary skill in the art to use the coupling system of the image capture device to the processor as though by Safai, in the moving window of processing image as shown by Sussman et al. since the coupling of the image capture to the process could be used in the moving window of processing image to achieve a predictable result to have available components that can be used by a variety of digital camera manufacturers, regardless of their specific image sensor, color interpolation scheme (paragraph [0010], line 2-4).

Therefore, the rejection of claims 12 and 22 is good and should be sustained.

e) Regarding claim 23, Applicant's argues that Paik et al. do not teach using a concentration ratio CR as defined in the subject application. Furthermore, Miyamoto does not teach or suggest the use of concentration ratio as defined by the subject matter. Moreover, Miyamoto is non-analogous art that may not form a basis for rejecting the claimed subject matter.

However, in response to the Applicant's argument, the Examiner disagrees for the following reason:

First, the Examiner would like to point out that the Miyamoto is used to produce an understandable rational for linking the two references, where Miyamoto teaches a concentration ratio of the liquid which provide just a number in form of ratio (example 10:1) which would provide Paik's method of processing an image the improving of

image quality. Therefore, both Paik and Miyamoto deal with the improving of image quality in the foregoing image, which makes the two references analogous to each other. *Second,* in response to the applicant's arguments that Miyamoto is non-analogous art that may not form a basis for rejecting the claimed subject matter; the Examiner would like to point out the following precision:

Paik et al. teaches a method of processing an image, comprising: capturing an image of an object (column 8, line 49-56); and applying controlled, equalization to an image generated by the image capture device 9column 10, line 6-16).

Paik et al. do not explicitly mention the use of a concentration ratio.

Miyamoto teaches the concentration ratio (paragraph [0030], line 8-10).

All the processing system of an image which comprises the applying controlled, equalization to an image captured by the image capture device is known by Paik and Miyamoto references. The only difference is the combination of the concentration ratio with the histogram equalization method and processing images.

In addition the KSR states: "All the claimed elements were known in the prior art and one skilled in art could have combined the elements as claimed by known methods with no change in their respective functions, and the combination would have yield predictable results to one of ordinary skill in the art at the time of the invention"

Thus, it would have been obvious to one having ordinary skill in the art to use the concentration ratio though by Miyamoto which is just value number in form of ratio in the method of processing images though by Paik et al., since the concentration ratio which is just a value number in form of ratio can be used in the method of processing images

to achieve a predictable result of improving the image quality in the forgoing image forming method (paragraph [0015], line 1-3).

Therefore, the rejection of claims 13 is good and should be sustained.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 4-6, 10, 14-16, 20, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sussman et al. (US 5,686,960) in view of Miyamoto (US-PGPUB 2002/0175986).

(1) Regarding claims 1, 10, and 24:

Sussman et al. disclose a moving-window, histogram equalization method of processing images (column 25, line 44-47), system (column 2, line 40-41), and computer program (column 6, line 26-30), the method comprising:

breaking the image into a plurality of tiles (column 6, line 39-41); and

processing each of the plurality of tiles by (column 5, line 59-60), (it is read that the image processor is processing the plurality of tiles) by obtaining a control parameter (column 27, line 35-37);

determining a histogram for one of the plurality of tiles (column 9, line 21-23), (the determining of histogram is read as the same concept as the determining of a histogram area).

determining an area of the image that includes the one of the plurality of tiles and information outside the one of the plurality of tiles (column 10, line 15-18);

creating a first output by performing a histogram equalization on the area (column 9, line 21-23);

creating a second output based on the control parameter and the first output (column 15, line 64-67); and

using the second output to process the one of the plurality of tiles (column 16-line 1-3).

Sussman et al. do not explicitly mention the determining of a concentration ratio.

Miyamoto, in analogous environment, teaches an image forming process and image forming apparatus, where determining the concentration ratio (paragraph [0030], line 8-10), (it is read that the concentration ratio is just number in form of ratio).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Miyamoto, where determining the concentration ratio which is just a number if form of ratio, in the system of Sussman et al. in order to further improve the image quality in the forgoing image forming method (paragraph [0015], line 1-3).

(2) Regarding claims 4 and 14:

Sussman et al. further disclose the method, and system (column 2, line 40-41), where the area includes the one of the plurality of tiles (column 10, line 17-18), (the examiner interpreted that the tiles are included in the area) and one or more portions of other tiles in the plurality of tiles (column 24, line 50-53), (it is read that the portion of tiles are included in the subdivided areas).

(3) Regarding claims 5 and 15:

Sussman et al. further disclose the method, and system (column 2, line 40-41), where obtaining the first control parameter includes obtaining a control parameter from a user (column 44, line 57-60), (it is read that the removing of the undesirable motion blur from the real time image by the user includes the control parameter).

(4) Regarding claims 6 and 16:

Sussman et al. further disclose the method, and system (column 2, line 40-41), where determining a concentration ratio for the one of the plurality of tiles includes scaling a concentration ratio value (column 26, line 25-34).

(5) Regarding claim 20:

Sussman et al. disclose an image processing system (column 2, line 40-41), comprising:

an image capture device operable to output an image (column 5, line 37-39, and column 16, line 14-16); and

a controlled, equalization processor coupled to the image capture device, the processor configured to break the image into a plurality of tiles and process each of the plurality of tiles (column 5, line 59-60) by

determining an area of the image that includes the one of the plurality of tiles and information outside the one of the one or more tiles (column 10, line 15-18);

creating a first output by generating a histogram of the area (column 9, line 21-23);

creating a second output based on the control parameter and the first output (column 15, line 64-67); and

using the second output to process the one of the plurality of tiles (column 16, line 1-3).

Sussman et al. do not explicitly mention the determining of a concentration ratio.

Miyamoto, in analogous environment, teaches an image forming process and image forming apparatus, where determining the concentration ratio of the liquid (paragraph [0030], line 8-10), (the determining of a concentration ratio of the liquid is read as the same concept as the determining of concentration ratio of tiles, since the ratio concentration is a number in form of ratio).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Miyamoto, where determining the concentration ratio which is just a number if form of ratio, in the system of Sussman et al. in order to further improve the image quality in the forgoing image forming method (paragraph [0015], line 1-3).

6. Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sussman et al., and Miyamoto, as applied to claims 1 and 10 above, and further in view of Sawada et al. (US 7,023,582).

Sussman et al., and Miyamoto disclose all the subject matter as described in claim 1.

Sussman et al., and Miyamoto do not explicitly mention the creating of the first output includes creating a first look-up table and creating the second output includes creating a second look-up table.

Sawada et al., in analogous environment, teaches an image processing apparatus, where creating the first output (column 4, line 10), (the generating of the first address is read as the creating of the first output) including creating of the first look-up table (column 4, line 9-12), and the creating of the second output (column 4, line 17), (the generating of the second address is read as the creating of the second output) including creating second look-up table (column 4, line 15-17).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Sawada et al., where creating the first and the second look-up table, in the system of Sussman et al. in order to realize the reproduction of a black character, and elimination of instability of dark color reproduction (column 2, line 1-3).

7. Claims 11 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sussman et al., and Miyamoto, as applied to claims 10 and 20 above, and further in view of Hannah (US 5,859,710).

Sussman et al., and Miyamoto disclose all the subject matter as described in claims 10 and 20 above.

Sussman et al., and Miyamoto do not explicitly mention the coupling of the printer to the processor.

Hannah, in analogous environment, teaches a digital copying system using a high-speed data bus without the use of data buffers, where the printer is coupled to the processor (column 3, line 14-16).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Hannah, where the printer is coupled to the processor, in the system of Sussman et al. in order to transfer a digital image faster to suit the needs of print engine to print the object in real time (column 3, line 8-9).

8. Claims 12 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sussman et al., and Miyamoto, as applied to claims 10 and 20 above, and further in view Safai (US-PGPUB 2003/0048361).

Sussman et al., and Miyamoto disclose all the subject matter as descried in claims 10 and 20 above.

Sussman et al., and Miyamoto do not explicitly mention that the image capture device is coupled to the processor.

Safai, in analogous environment, teaches a digital camera, where the digital camera includes an imaging unit connected to a digital image processor (Fig. 2A, paragraph [0035], line 3-5), (the connecting of the imaging unit to the processor is read as the same concept as coupling the imaging unit to the processor).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Safai, where the image capture device and the processor are coupled, in the system of Sussman et al. in order to have available components that can be used by a variety of digital camera manufacturers, regardless of their specific image sensor, color interpolation scheme (paragraph [0010], line 2-4).

9. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Paik et al. (US 6,163,621) in view of Miyamoto (US-PGPUB 2002/0175986).

Paik et al. disclose a method of processing an image, comprising:

Capturing an image of an object (column 8, line 49-56); and

Applying controlled, equalization to an image generated by the image capture device (column 10, line 6-16).

Paik et al. do not explicitly mention that the controlled, histogram equalization uses a concentration ratio.

Miyamoto, in analogous environment, teaches an image forming process and image forming apparatus, where using a concentration ratio of the liquid (paragraph [0030], line 8-10), (the using of concentration ratio of the liquid is read as the same

concept as the determining of concentration ratio of tiles, since the ratio concentration is a number).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the system of Miyamoto, where using the concentration ratio of the liquid, in the system of Sussman et al. in order to further improve the image quality in the forgoing image forming method (paragraph [0015], line 1-3).

Allowable Subject Matter

10. Claims 2, 7-9, and 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information:

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amara Abdi whose telephone number is (571)270-1670. The examiner can normally be reached on Monday through Friday 8:00 Am to 4:00 PM E.T..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on (571) 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Amara Abdi/
Examiner, Art Unit 2624
/Jingge Wu/
Supervisory Patent Examiner, Art Unit 2624